REMARKS/ARGUMENTS

This Application has been carefully reviewed in light of the Office Action mailed November 9, 2006 (the "Office Action"). Claims 1-11, 13, 21, and 23-51 were previously cancelled, claim 20 was previously withdrawn, and claim 12 is currently amended. Claims 12, 14-19, and 22 are pending in the application. Claims 12, 14-19, and 22 are believed to be allowable in light of the amendments and arguments presented below. Reconsideration of the claims is respectfully requested in light of the amendments and arguments presented below.

We refer the Examiner to the attached Declaration that has been executed by one of the inventors of the instant application, *viz*: Dr. Chongjun Jiang. By way of summary, the Declaration avers inter alia that extrudable cementitious formulations are very different to formulations for processing on conventional fibre-cement processing apparatus (i.e. conventional processing means typically requiring the use of slurried/pourable/pumpable cementitious formulations), and that such formulations are simply not interchangeable. Use of the term "extrudable" in the claimed application serves to differentiate the claimed formulations from prior art slurried/pourable/pumpable cementitious formulations. Furthermore, the prior art does not teach nor suggest the claimed invention, and in particular, does not teach or suggest the claim limitation that: ".. the quantity of dispersion agent is sufficient to increase the efficacy of the viscosity enhancing agent during extrusion of said extrudable cementitious formulation." Applicant respectfully requests consideration of the following rebutting arguments in view of the annexed Declaration.

Provisional Obviousness Type Double Patenting Rejection:

In the Office Action, the Examiner provisionally rejects claims 12, 14-19, and 22 under the judicially created doctrine of obviousness type double patenting as being unpatentable over claims 1-11 of US Patent Publication 2005/0045067 A1 (10/960,150 Naji et al.). In making this rejection, the Examiner restates his previous position that "[a]lthough the conflicting claims are not identical, they are not patentably distinct from each other because Naji et al. teach a composition comprising cement, plastizer such as melamine sulfonate formaldehyde (page 2 [0033]), cellulose (p.3) and gums [0039] in amounts overlapping the instantly claimed invention." Applicants again disagree with the Examiner's position, as stated oddly at page 10

of the Office Action, that the distinguishing language is merely functional, and that one of ordinary skill would understand that a dispersant would improve the fluidity of a cement mixture.

A double patenting rejection of the obviousness-type is "analogous to [a failure to meet] the nonobviousness requirement of 35 U.S.C. 103" except that the patent principally underlying the double patenting rejection is not considered prior art. *In re Braithwaite*, 379 F.2d 594, 154 USPQ 29 (CCPA 1967). Therefore, any analysis employed in an obviousness-type double patenting rejection parallels the guidelines for analysis of a 35 U.S.C. 103 obviousness determination. *In re Braat*, 937 F.2d 589, 19 USPQ2d 1289 (Fed. Cir. 1991); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985). All limitations of the claimed invention must be considered when determining patentability. *In re Lowry*, 32 F.3d 1579, 1582, 32 U.S.P.Q.2d 1031, 1034 (Fed. Cir. 1994). Applicants reiterate for the record their previous position. The present invention in claim 12 recites in relevant part "wherein the quantity of dispersion agent is sufficient to increase the efficacy of the viscosity enhancing agent during extrusion of said cementitious formulation." Such a feature is not found in Naji. Therefore, the provisional obviousness type double patenting rejection is improper.

Second, the Examiner states that a dispersion agent would increase the fluidity of a formulation which teaches away from the discovered, and claimed, effect of a dispersion agent increasing the efficacy of the viscosity enhancing agent, as claimed in claim 12. Further, as noted in the accompanying Declaration one of ordinary skill in the art, a dispersant would not be known to provide an unexpected synergy between the dispersing agent and the viscosity enhancing agent for a fiber cementitious formulation. (Decl. at ¶¶ 10 and 25).

For these reasons, applicants respectfully request that the Examiner withdraw the rejections under the judicially created doctrine of obviousness type double patenting.

Rejections under 35 USC 112 (second paragraph)

Claims 12, 14-19, and 22 are rejected under 35 U.S.C. 112, second paragraph. Applicants acknowledge with appreciation the Examiner's withdrawal of the rejection regarding the term 'density modifier". Regarding claim 12, applicants have amended the claim to include water. Applicants respectfully submit that the Examiner's rejection is moot. Regarding claim

20, applicants are generally amenable to amending the claim along the lines the Examiner has suggested ("---a polymer comprising at least one monomer---") should the Examiner find claim 12 allowable and rejoin withdrawn claim 20.

Rejections under 35 USC 102(b) and 35 USC 103

The Examiner has rejected claims 12, 14-19, and 22 as being either anticipated under 35 U.S.C. § 103(b) or unpatentable under 35 U.S.C. § 103(a) in view of multiple references (See Office Action at p.4).

The Examiner kindly recognizes (admits, in fact) that McCurrich *et al.* ('480) does not teach extrudability. McCurrich discloses slurry compositions. McCurrich's composition does not teach all the limitations of the claimed invention and therefore does not anticipate it. Claim 12 recites in relevant part "0.3-5% by weight of dry solids of cementitious material of viscosity enhancing agent." Assuming that the "gelling agent" of McCurrich corresponds to the recited viscosity enhancing agent, Examples 1 to 3 in McCurrich disclose 0.0453 wt%, 0.051 wt%, and 0.0544 wt% of hydroxyethyl cellulose based on the weight of the Portland cement. These values are outside of the claimed range of "0.3-5%", in fact, they are 5-fold less. Consequently, McCurrich fails to teach the claimed limitation of "0.3-5%" and does not anticipate the claimed invention. Applicants respectfully submit that the claimed invention is non-obvious in view of McCurrich. The Examiner posits that the "pumpable McCurrich composition would be extrudable because it contains the same amounts of the same components and this extrudable property would thus also have been expected." However, as noted above, McCurrich does not teach the same amounts, and the Examiner has not shown that one would have had a reasonable expectation of success (c.f. MPEP § 2143) in formulating an extrudable composition in the amounts, as claimed, based on a pumpable slurry composition, which Examiner admits McCurrich only discloses. As the Declarant states at ¶ 6, a slurry composition is not self-supporting and is not extrudable. Accordingly, the Examiner has not established that the claimed invention is *prima facie* obvious.

AU 55929/86 does not teach nor suggest extrudability. A slurry composition is not self-supporting and is not extrudable. (Decl. at ¶ 6). And by the Examiner's own admission the

claimed invention is novel since the ranges do not overlap. The following paragraph excerpt has been taken from the equivalent family member of AU 55929/86, *viz* EP0200471 (p9, lines 12-21)

> "A functionally effective amount of the water-soluble polymer is employed in conjunction with the water-reducing agent in the liquid admixture concrete. Such amount is sufficient to extend the time of effective fluidity of the concrete mixture. Such polymers are known to thicken aqueous systems, so the upper limit on the amount employed is that amount which so thickens the aqueous admixture that it cannot be effectively provided to a concrete mixture or the concrete mixture itself is unworkably thick"

Clearly the Applicant of AU 55929/86 believes there to be an upper functional limit to the viscosity to which his invention can be applied, however the "upper limit on the amount employed" is below the operational viscosity limit for an extrudable mix. Accordingly, the claimed invention is novel and non-obvious in view of the document.

Kawai et al. ('364) does not teach nor suggest extrudability. The document clearly relates to pourable compositions (as evidenced by the "slump" parameter), and therefore simply cannot anticipate or suggest the claimed invention. The graphs shown in this document indicate that the amount of additives used in the claimed application would produce a slump of 5-30mm in a slurry. In contrast, an extrudable cementitions formulation would have a zero slump. Kawai does not teach a formulation that can be used to form a zero slump composition, suitable for extrusion.The document clearly relates to pourable compositions, and therefore simply cannot anticipate the claimed invention. Similar comments apply to Matsuoka et al. ('821) and Valore '231 which is directed to pumpable slurries and not to extrudable mixes (see examples).

Burge *et al.* ('123) relates to a cement set-accelerating agent comprising a carbonic acid mono- or di-ester and a surfactant or air-entrainer. Other additives such as superplasticisers etc are added as an afterthought to improve the workability and/or properties of the final building material such as accelerating or retarding the setting of the mixture. There is no indication that it is or could be extrudable. A slurry composition is not self-supporting and is not extrudable. (Decl. at ¶ 6).

Wada *et al.* ('771) does not teach the claimed dispersion agent. Accordingly, the claimed invention is novel. The Examiner then asserts that "...other known conventional surfactants/dispersants may be substituted because they are functionally equivalent such as applicants' melamine formaldehlde condensate . The applicants disagree with this assertion and emphasizes the surprising synergy between the claimed dispersion agent and viscosity enhancing agent, and further emphasizes that this synergy has not been suggested in this document. Accordingly, the claims invention is non-obvious since the synergy has not been suggested.

On pages 9 and 10 the Examiner asserts that Jungk et al. ('505) and Beyn ('380) teach functionally equivalent surfactants (dispersants), and attempts to show that it would be obvious to modify Wada *et al.* ('771) to result in the claimed invention. However, applicants wish to point out that the instant invention is not limited to any dispersion agent; rather, the claimed invention is limited to a particular dispersion agent, and the applicants assert that this choice over the myriad of dispersion agents confers an novelty and non-obviousness.

In relation Risch *et al.* ('557), not only does the document not teach the claimed invention, it does not even suggest it. To explain, the polymers taught by Risch are clearly not viscosity enhancers, as one skilled in the art would be aware. In fact, they are specifically chosen to "...bring increased strength and durability..." (col. 10, lines 51-52). Further, Risch asserts at col. 8 lines 47-54 that the dispersion agent and polymer latices "...reduce the viscosity of the formulation..." Accordingly, Risch does not anticipate or suggest the claimed invention.

In relation to WO 86/00291 does not teach nor suggest extrusion of the formulations taught therein and, accordingly, simply cannot anticipate the claimed invention. Since there is no teaching, suggestion or motivation to extrude the formulations Applicant asserts that the present invention remains non-obvious in view of the document.

Sobolev et al ('289) refers to extrusion only in passing, and there is certainly no enablement of extrusion. The document does not suggest or teach the claimed invention and certainly does not teach or suggest the claim limitation that: ".. the quantity of dispersion agent is sufficient to

increase the efficacy of the viscosity enhancing agent during extrusion of said extrudable cementitious formulation."

By the Examiner's own admission, Fujito et al (JP 06-127992) does not teach the claimed invention. Accordingly, the claimed invention is prima facie novel in light of the document. The Examiner then asserts that Fujito's formulations, (which are different to the claimed invention), would be equivalent to the claimed invention, and therefore the Examiner appears to conclude on this basis that Fujito suggests the claimed invention. Applicant disagrees with the Examiner's logic and reiterates the novelty of the claimed invention in view of Fujito, and that there is no teaching or suggestion of the claim limitation that: ".. the quantity of dispersion agent is sufficient to increase the efficacy of the viscosity enhancing agent during extrusion of said extrudable cementitious formulation.", and hence the claimed invention remains non-obvious in view of Fujito.

The Examiner has cited Hayakawa *et al.* ('086) in combination with the primary references to assert that it is conventional to add fiber/silica/aggregates to extrudable cementitious formulations. However, the document does not teach nor suggest the inventive concept of the claimed invention and therefore does not render the claimed invention obvious.

In relation to Downing *et al.* ('199), whilst the Examiner notes that "dispersion agents" are the same as "plasticisers, super plasticisers, or water reducing agent aids or agents", and that "these components are known to be added to cement compositions..." etc, the document does not teach nor suggest the inventive concept of the claimed invention, and therefore does not render the claimed invention obvious.

In relation to Bobrowski *et al.* ('145), the Examiner asserts that the addition of dispersion agent would have been an obvious design choice for one of ordinary skill in the art. Whilst it may be true that a dispersion agents may be added into a cementitious formulation, the document does not suggest extrusion. Further, the Examiner has misinterpreted the cited passage in the document, which clearly relates to flowable concretes ("that is essentially self-leveling" col. 2 line 23), which, one skilled in the art would be aware, are low viscosity. Further, the document

does not suggest the ranges claimed in the present invention, nor does it teach or suggest the inventive concept as claimed, i.e. "wherein the quantity of dispersion agent is sufficient to increase the efficacy of the viscosity enhancing agent during extrusion of said extrudable cementitious formulation.' Accordingly the Applicant asserts that the claimed invention is novel and non-obvious in light of the document.

In relation to Fukuba *et al.* ('697), the Examiner argues that applicants' comparison was not "apples to apples". Fukuba *et al.* discloses that the amount of DA or VEA is in relation to the amount of gypsum. This is the basis of applicants' comparison. Applicants invite the Examiner to note Fukuba *et al.*'s specification at column 3, lines 43 to 46, for instance, regarding the amount of dispersing agent and throughout the reference where amounts of other compounds are identified relative to gypsum, without reference to the amount of the overall composition. Applicants' analysis is correct. Fukuba *et al.*'s composition falls outside of applicants' claimed range, as applicants' noted previously, and in the instance where the sulfonated DA concentration range overlaps with that claimed by applicants, Fukuba *et al.*, does not teach the **combination** of DA and VEA having the ranges as claimed. Fukuba *et al.* thus fails to anticipate claim 12. Further, Fukuba *et al.* does not render the claimed invention obvious for the same reasons. Fukuba *et al.* must teach or suggest all the claim limitations, (MPEP § 2143), however, it fails to teach the combination of the claimed ranges, at the least. Further, applicants are troubled that the Examiner failed to address why a non-extrudable composition could teach applicants' claimed invention. As applicants noted, the Fukuba "fluid plaster composition" (see title) has a viscosity of 2000 cp or less and only discloses that the composition is pourable. The Examiner has not established why one would have a reasonable expectation of success in using Fukuba's composition to produce an extrudable composition. In fact, that Fukuba et al. provides a pourable rather than an extrudable composition underscores the fact that the composition of Fukuba is different from the claimed composition.

In relation to Scherrman *et al.* ('383), again, like many of the other references that the Examiner relies upon, fails to teach extrudable compositions. The ranges in the examples shown in Scherrman et al ('383) are inconsistent with those claimed in instant application. The examples of Scherrman et al ('383) show 0.17% by weight of dry ingredients of viscosity enhancing agent

and >0.5% by weight of dispersion agent. Neither mix can be shown (by anything taught in Scherrman et al ('383)) to produce an effect in an extrudable fibre reinforced cementitious formulation. The water contents are so high as to form a mix not capable of supporting it's own weight. Accordingly, the claimed invention remains novel and non-obvious in light of this disclosure.

In relation to Dingsoyr, applicants assert that the documents does not teach nor suggest extrusion; in fact, Dingsoyr teaches away from extrusion (see at least the Title of Dingsoyr).

CONCLUSION

In light of the remarks and arguments presented above, applicants submit that the pending claims in the Application are in condition for allowance, and requests favorable consideration and allowance of these claims.

No fees are believed to be due at this time. Applicants hereby authorize the Commissioner to charge any additional fees or refunds that may be required by this paper to Deposit Account 07-0153.

If the Examiner has any questions or comments, or if further clarification is required, it is requested that the Examiner contact the undersigned at the telephone number listed below.

Respectfully submitted,

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Dated: May 9, 2007

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